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EFFICIENCY THROUGH ACCOUNTING

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Efficiency is applied common sense in any field of human activity or endeavor from catching fish to governing a nation. The essential quality is and must always be the same. The American Society for Promoting Efficiency says: "Efficiency is the ratio of result obtained relative to the amount of expenditure in obtaining it." This definition describes not efficiency but the measure of efficiency. The quality itself cannot become the proprietary possession of a group of expert theorists. The word should not be permitted to have a technical meaning.

Efficiency in municipal administration means doing the things which the citizens of the municipality want done as well as possible at the smallest possible expense. The question of accounting is of great import in accomplishing this result, and the statements in this article are based upon the experience of the City of New York.

The best possible system of accounting cannot produce efficient administration of municipal affairs. On the other hand, efficient administration of municipal affairs is impossible without an adequate system of accounting to control municipal operations. The people of a community decide for themselves what they want done by their government. They tell the men whom they elect to public office and these men control the operations of government in such a way as to accomplish the things the people want. To enable these men to direct the activities of government intelligently and economically, it is essential that they should have constantly before them the facts and figures bearing upon current operations. It is only through proper accounting methods that these facts can be had.

Under the Greater New York Charter the Board of Estimate and Apportionment constitutes what would ordinarily be termed the Board of Directors of the municipal corporation. The comptroller of the city is the fiscal officer of the corporation, and, *ex officio*, the financial adviser of the Board of Estimate. The comptroller is also the chief accountant of the city. Under the charter

he prescribes accounting forms for all municipal activities. The practical results which have been obtained, and which will be obtained from the installation of proper accounting methods, can best be illustrated by the consideration of a few of the larger advantages which have been brought about within the period of four or five years since the City of New York began to give its attention to the problem of producing greater efficiency in the government.

The most important single duty of the Board of Estimate and Apportionment is to prepare the annual tax budget. This budget constitutes the plan of operation of the city for the ensuing year, and provides the money needed for the maintenance of that plan, apportioning the total amount appropriated to the different city departments for the carrying out of the almost innumerable functions of city government.

It was not until the year 1909 that any real effort was made to obtain a financial control of the expenditures contemplated in the budget. Since that time there has been an increasing effort and a constant improvement in the accounting methods used to obtain this control. The beneficial results of these improved methods have been very clearly demonstrated. As far back as 1906 the comptroller of the city realized in a measure the inadequacy of the information upon which the Board of Estimate was making its annual appropriations. He was instrumental in securing an amendment to the charter, whereby the Bureau of Municipal Investigations and Statistics in the Department of Finance was created. That bureau is empowered to gather such statistics as may be needed, not only in the work of budget making but in all fields of city activity. The Bureau of Investigations did its first effective budget making work in the year 1907. A partial attempt was made that year to show the purpose of each appropriation in the budget. Until that time the titles of appropriations had been without meaning and money appropriated had been used in many instances for purposes other than those covered by the titles of the appropriations.

In 1908 the Bureau of Investigations tried to obtain from the different city departments information upon which the Board of Estimate might determine intelligently the amount of money which would be required for the maintenance of the departments for the following year. It was found almost impossible to get such information. There was no uniformity in the classifications used by the

various departments. To remedy the situation a form for departmental estimates was prepared. This form was designed to elicit from each department the information which was then considered necessary. Each department was required to give the data of classified expenditures for previous years. The facts and figures thus collected made it possible for the budget makers to exercise for the first time an intelligent judgment in determining the necessity of previous appropriations and the amounts necessary for 1909 appropriations for the same purposes. The budget for 1909 was the first in the history of the city based upon departmental experience. It was also the first budget which gave to the Board of Estimate anything approaching a financial control of departmental operations for subsequent years. It marked the greatest step forward toward efficient administration in the history of the city.

In order that the city might gain the full advantage of the information obtained through this system of accounting, the Board of Estimate and Apportionment adopted certain rules of procedure. These rules have been amended and approved from year to year since that time. The rules first adopted were briefly these:

1. All employees receiving per annum salaries and paid entirely out of tax levy funds were shown in schedules giving the title, rate of compensation and the number of incumbents.
2. Employees receiving other than per annum compensation were scheduled by title and with a lump sum appropriation for each class of labor.
3. A resolution in the budget limited monthly expenditures against appropriations for per annum employees to a monthly rate of one-twelfth of the schedule line allowance.
4. All budget appropriations were given serial code numbers.
5. A uniform classification of expenditures was adopted as far as was possible at that time.
6. Any change in a schedule of "Salaries" and "Salaries and Wages" was forbidden except when authorized by twelve votes of the Board of Estimate and Apportionment.

Although the budget for the year 1909 was a great improvement over those of previous years, it was far from satisfactory, and the Board of Estimate and Apportionment found it very difficult of administration. Strong opposition to the enforcement of the budget

resolutions was encountered in the departments. The appropriations for salaries and wages fluctuated so widely during the year that uniform control was impossible. New forms were designed calling for much more elaborate information from the departments than that given in the previous forms. Departments were required to furnish full data regarding actual pay roll expenditures, monthly, semi-monthly and weekly, for a period of eighteen months during 1908 and 1909, with semi-annual recapitulations of these expenditures.

In the budget for 1910 the classification of expenditures for salaries and wages was carried out to a considerably greater extent than in that of the previous year. The results obtained fully justified the extra labor involved in the preparation of the budget.

Still further improvement was made in the tax budget for 1911. The 1910 budget had worked in a fairly satisfactory manner. This was especially true of the salary appropriations. Such full information had been before the Board of Estimate on the administration of salaries and wages throughout the city departments that it was not considered necessary to require the same exhaustive details of salary expenditures from the departments for the ensuing year. The Board of Estimate and Apportionment had ample information regarding the services of all employees that were paid on the annual salary basis.

The most striking advance made in the 1911 budget in the field of obtaining information in regard to payment for services was to require from all city departments schedules showing expenditures in what are known as wage appropriations, that is, pay roll expenditures for employees paid at other than annual rates. These schedules show first, each class of labor; second, each rate of compensation within each class of labor; and third, the number of days of employment.

The information thus obtained enabled the Board of Estimate and Apportionment to extend control over wage appropriations. In the 1911 budget appropriations were made for wages of employees under definite title at a definite rate of compensation, for a definite number of working days. This was necessary because some employees work every day in the year, some work every day except Sundays and holidays, some every day except Sundays, holidays and Saturday afternoons, and some for fractional parts of the year. Further differentiation was made between regular em-

ployees and temporary employees. A rough attempt was made to extend the system of control over employees whose compensation was paid only partly out of tax levy funds. No uniformity of control was attained over this class.

The principle of restricting monthly expenditures to one-twelfth of the total appropriation, which had been established in 1908 over annual salary appropriations, was extended to the appropriations for wages. The resolutions accompanying the 1911 budget provided:

1. That no transfers shall be made from appropriations or schedules of "Salaries," or "Salaries, Regular Employees," to any other appropriation or schedule than "Salaries," or "Salaries, Regular Employees."
2. That no transfers shall be made from appropriations or schedules of "Salaries, Temporary Employees," to any other appropriation or schedule than "Salaries, Temporary Employees."
3. That no transfers shall be made from appropriations or schedules of "Wages, Regular Employees," to any other appropriation or schedule than "Wages, Regular Employees."
4. That no transfers shall be made from appropriations or schedules of "Wages, Temporary Employees," to any other appropriation or schedule than "Wages, Temporary Employees."
5. That no transfers shall be made from appropriations or schedules of "Compensation, Temporary Employees," to any other appropriation or schedule than "Compensation, Temporary Employees."
6. That no transfers shall be made from any of the appropriations made herein for the various kinds of supplies and contingencies to any other than to supply or contingency accounts.

These resolutions had the effect of returning to the general fund large balances of appropriations which, under the rules governing previous budgets, would have been consumed in the different departments during the closing months of the year.

In the old days it was not unusual, in the event of the existence of a surplus in the salary account of a department at the close of the year, for favored employees, at salaries ranging from \$1,000 to \$2,500 a year, to be placed upon salaries ranging from \$10,000 to \$25,000 a year for the months of November and December.

The following quotation from the official records of the Department of Finance may prove of interest. Names are omitted for obvious reasons.

"December 31, 1895.

"First Auditor of Accounts:

"DEAR SIR:—The Comptroller has designated and fixed the salaries of the persons hereinafter mentioned for the month of December, 1895, at the following amounts:

(Office designated) \$1,583.37, or at the rate of \$18,500
a year. (This employee was on a
salary of \$5,000 a year.)
(Office designated) \$625.00, or at the rate of \$7,500 a
year. (This employee was on a
salary of \$2,500 a year.)"

Many other employees are mentioned by name, with substantial increases in salaries, for the month of December. Until the adoption of the schedule system there was no check against this form of favoritism shown to employees in all city departments.

Another very important feature of the 1911 budget was that it included no appropriations for any position or grade of position not established according to law under Section 56 of the Greater New York Charter. Section 56 provides the method by which positions in the city service and salaries for these positions are established. Recommendations are made by the Board of Estimate and Apportionment and the positions and salaries fixed by the Board of Aldermen. Up to this time hundreds of positions had been occupied and the incumbents had drawn salaries, although the positions had no legal existence.

In the making of the tax budget for 1912 the Board of Estimate preserved all that was good in the previous budgets and endeavored to accomplish two very important objects that had not been attained by the previous budgets. These objects were:

1. To complete the schedulizing of all employees of the City of New York, regardless of the funds from which they were paid, whether entirely from the tax levy, or partly from corporate stock, special and trust fund, or revenue bond fund, or entirely from all or any of these sources.

2. To extend to appropriations for supplies and materials the same system of accounting control which had proved so effective in the salary and wage appropriations.

Analytical information similar in character to that previously required regarding salaries and wages was required from the departments in regard to previous expenditures for supplies and materials. The results achieved almost entirely through improved accounting methods, as applied to budget making by the Board of Estimate, during the period from 1909 to 1912, inclusive, may be set down as follows:

1. Complete control over every employee paid out of city funds, regardless of whether they are derived from taxes, corporate stock proceeds, or other sources. This is accomplished by schedules for all salary and wage accounts.
2. Complete control over all appropriations for supplies, materials, contingencies and other purposes besides personal service.
3. A clear and definite statement of the purpose of each appropriation in the budget.
4. Prevention of the use of the appropriation for any purpose other than that for which the appropriation was originally made.
5. Prevention of the use of corporate stock proceeds for the expenses of administration, operation and maintenance.
6. Prevention of the old practice of decreasing the number of employees and using the amounts released by such decreases to increase salaries or wages of other favorite employees.
7. Prevention of the old practice of wasting balances at the end of the year, instead of leaving these balances to be transferred to the general fund.
8. Prevention of the practice of using up all the appropriation in the first few months of the year, thereby necessitating the issue of revenue bonds for purposes fully cared for in the original budget appropriation.
9. Prevention of a violation of the law which provides that no obligation shall be incurred beyond the amount of the available appropriations.
10. Prevention of the practice of impairing the efficiency of funds by running at a low rate of expenditure for several months of the year to save money to raise salaries and increase the force for the last month of the year with the object of forcing the Board of Estimate and Apportionment to make up the next year's budget on the basis of these abnormal increases.

11. The elimination of the theory that all appropriations were to be regarded by the department heads as their personal property, to be used as they pleased.

12. A uniform classification of appropriation accounts with a view to making the audit of pay rolls and vouchers easy and effective.

13. Abolishment of the old practice of paying large salaries to political favorites out of corporate stock appropriations, which hitherto were unscheduled.

14. Prevention of the employment of any person payable out of the city's funds without the express approval of the Board of Estimate and Apportionment in the form of a salary or wage schedule.

15. Abolishment of the practice of employing persons in positions not legally established, as required by Section 56 of the Greater New York Charter.

In addition to the great improvement in the public service which has taken place during the period mentioned, it is significant that, for the year 1908, before the schedule regulations of the Board of Estimate and Apportionment went into effect, the accrued balances of salary and wage appropriations returned to the general fund for the reduction of taxation, amounted to \$314,760.76. For 1909, when there was an enforcement of partial regulations, there was returned to the general fund, from the same source, \$1,081,748.34. For the year 1910, when the regulations governing salaries and wages had become fully operative, there was returned from this source to the general fund, \$1,958,730.67. When the budget for 1911 was prepared the schedule plan had demonstrated that economies could be effected. It was determined to reduce the budget and the Board of Estimate and Apportionment adopted a resolution calling upon all city departments to reduce the estimates of the previous year by ten per cent. In some of the departments this reduction was effected. As a result of the resolution, however, a large cut was made in the salary appropriations for most of the departments. Because of this fact, and the fuller information in the possession of the Board of Estimate and Apportionment, when the budget was made, salary accruals returned to the general fund from 1911 appropriations amounted to less than the previous year. The total was \$1,391,185.26.

The foregoing plan has proved so successful that similar sched-

ules are now being adopted for every corporate stock fund, special revenue bond fund, or special and trust fund. In this way the control of the Board of Estimate and Apportionment over salary and wage expenditures is complete.

The next step will be a full inquiry into the nature and quality of services given by city employees in the various departments and offices, with the purpose of establishing standard rates of payment for similar quality and quantity of work in all departments. The Board of Estimate and Apportionment has already appointed a committee to carry out this inquiry.

The ultimate purpose of the Board of Estimate to establish accounting control through the schedule and cost system over all current expenditures of city money, is in the way toward early realization.

In all probability the budget for next year will be accompanied by a cross reference complementary budget, which will set forth the expenditures of the city by functions, that is, the respective amounts to be spent for public health, education, safety, etc.

Among the duties of the Board of Estimate, second only in importance to the making of the annual tax budget, is the spending of the money of the city for permanent improvements. Money spent for the permanent improvement of the city is obtained by the sale of long-time securities known as corporate stock. Authority for such expenditures can be given only by the Board of Estimate and Apportionment and the Board of Aldermen. In 1910, the first year of the present administration in New York City, the Board of Estimate determined upon a fixed policy of treating such expenditures in a manner as closely similar to that employed in the making of the annual tax budget as the nature of the case would permit. It resolved upon the adoption of an annual "corporate stock budget."

In previous years authorizations of corporate stock, carrying many millions of dollars, were made for unnecessary purposes. Since the adoption of the budget system of dealing with authorizations, the Board has applied the same analytical methods of testing the applications of the different departments and offices as it uses in preparing the tax budget. It is now the practice to authorize corporate stock for specific improvements only and to limit the amount of each authorization. Whenever possible, the appropriation is segregated into amounts to be used for the parts of the general

work to be done. A very careful analysis has been made of existing authorizations for the sale of corporate stock, with the result that the authorizations of many millions of dollars have been rescinded, the purposes for which they were granted being regarded as unnecessary or unwise.

The Board of Estimate requires that all plans, specifications, estimates of cost and contracts for work payable out of corporate stock shall be approved by the Board of Estimate upon the recommendation of the comptroller. This form of accounting control has already resulted in the saving of many hundreds of thousands of dollars during the brief period it has been in operation. This scrutiny by the Board of Estimate of the method of expending money derived from the sale of corporate stock has resulted in a general demand for the adoption of standard plans wherever such standard plans are applicable. Standard contract forms are already in use in the employment of architects by the city for the purchase of coal and forage. Similar forms of contracts in other fields are in process of preparation.

The consideration of the application of analytical accounting methods to the purchase of supplies is the basis for the work now being done under the direction of the Board of Estimate and Apportionment by the Committee on the Standardization of Supplies.

In one aspect this effort to standardize supplies and establish purchases on a schedule cost basis is properly to be considered a form of accounting. Its essential quality is adequate accounting control.

The general subject of standardization and codification of supplies is, however, so large in its scope that it cannot be treated satisfactorily in an article of this character. New York City spends annually for supplies between twenty millions and twenty-five millions of dollars. The list of articles now under consideration by the Committee on the Standardization of Supplies comprises more than fifty thousand line items. Standard specifications for about one-third of these articles have already been prepared.

In order to supplement the work done by the Board of Estimate and Apportionment in the matter of appropriations, it is necessary that there should be available at all times a current report, which shall show as clearly and succinctly as possible what is being done from day to day with the city money. The effort to provide such a report has taken concrete shape in the installation of the so-called

new accounting system. The first purpose of this system is to give accurate periodical information to the city authorities, through the comptroller's office, regarding all financial transactions of the city government. The second purpose is to provide a means of preventing illegal or improper expenditure of the city money. Every large corporation and business house has a similar system of accounting control, modified by the difference in the character of its transactions. Experience has shown that, in the larger and more complex business affairs, such an accounting control is absolutely essential to efficiency. When the accounting system is fully installed in all the city departments, uniform methods of recording transactions and of reporting them will be in force throughout the city; through the establishment of stores and expense accounts now in process of formulation and installation, figures will be instantly available, showing the actual expenses of all classes of service and all classes of supplies.

As a necessary preliminary for the establishment of correct opening balances in the city's new general ledger covering the fifteen thousand accounts on the books of the Department of Finance, a reconciliation was undertaken of the records in that Department with those in the one hundred and thirty outside departments, bureaus and offices. Already this has resulted in the transfer of almost ten millions of dollars to the general fund for the reduction of taxation.

That amount was found in open appropriation and fund accounts not needed for the liquidation of liabilities for maintenance and operation in the years for which the appropriations were originally made. In consequence, the 1912 tax rate is about twelve cents lower on the one hundred dollars of valuation than it otherwise would have been. The writing off of these unencumbered balances, which had been deferred for about twelve years, principally because of the inertia of the past administrations, had also resulted in removing from the books of the city over five thousand inactive accounts, thus reducing the amount of accounting and reporting necessary to be done in connection with these accounts.

A current reconciliation has now been installed based upon the monthly checking of the accounts in the administrative departments with the controlling accounts in the Department of Finance.

Much has been said and written, especially in very recent times, regarding the value of the periodical balance sheet. The

purpose of the balance sheet is to set forth the financial condition of a business enterprise or a municipal corporation at a given date. It is a statement of assets and liabilities. In the case of the municipality the resultant balance would show at any time the condition of the public trust with respect to its current assets and liabilities, and would indicate whether there was a surplus available for lessening a succeeding year's tax levy, or a deficiency which would have to be provided for. Such a balance sheet will be one of the principal features of the general ledger now being set up in the Department of Finance of New York City.

The general ledger will be at the same time a periodical report of all the financial transactions of the city and a proof of the full accounting control over those transactions.

It is equally important that there shall be periodical statements of revenue and expense correlated with receipt of revenue and disbursement of authorized expenditure. Such a statement should include elements which do not appear on the balance sheet, such elements as moneys borrowed on short time loans to meet current administrative expense, the amounts collected from various sources, and the like.

The difference between accounting as a factor in efficiency, without a study of the conditions under which the accounts are to be operative, as compared with the results which are obtained by a method separate from accounting, is shown in my experience with the disbursement side of the audit in the Department of Finance.

The new form of accounting has been in operation in that office for two years. Under the organization which prevailed six months ago, the average interval from the presentation of a voucher for payment until the warrant in liquidation of that voucher was ready, approximated nine days. Without any change in the system of accounts or in the personnel of the force, but by a rearrangement of the work and the introduction of one or two simple labor saving devices, I feel sure that within the next six months we will be able to pay a majority of the city's claims within three days, and most of them within five days of their receipt in the hands of the Auditor of Disbursements of the Department of Finance.

I found, for instance, that the auditors were using three-quarters of their time, not in the work of audit, but in making calculations and extensions and in writing warrants. Without increasing the

clerical force in the audit room, I rearranged the work so that one staff of clerks did nothing but write warrants, another staff devoted themselves exclusively to calculations and extensions, leaving to the auditor the work properly belonging to his title. Two results were accomplished at once by this change. First, all the work in the audit room was cleared in a day, where heretofore vouchers would be delayed two or three days. Second, the proper segregation of the work showed that the audit could easily be done by ten auditors, where sixteen auditors had heretofore been used, and the actual number of hours available for audit by these ten auditors is considerably more than the sixteen auditors could devote to audit under the old system. Six men are now employed in writing the warrants, under the segregation previously referred to. Two typewriting operators are now wholly engaged in writing warrant schedules. I have in mind the use of a typewriting machine which will permit the two typewriting operators to write the warrants at the same time the schedules are written. Thus the six men now engaged in writing warrants will be released for other work in the department, and the department work at the same time expedited.

In the room of the Auditor of Disbursements, the vouchers, when received, had to pass from hand to hand among the accountants for a whole day before they were finally registered and ready for inspection, or for the engineers or for the audit. My labor saving device here is a set of three typewriting machines, the operators of which will transcribe from the vouchers, when received, all the necessary accounting information on slips in quadruplicate, which will be distributed to the various accountants, thereby allowing the voucher to progress at once for the further steps in audit instead of being delayed for a day as at present. In addition, a proof will be set up on one of the machines which will prove the accuracy of the registration, also give us our daily proof and prepare our fund report for the general ledger. This proof and reporting now takes the time of six men. Three typewriting operators will do that work, besides cutting off practically one day from the time of audit and also largely increasing the efficiency of all clerks working on our accounts.

The clerks working on accounts heretofore have posted from the vouchers, carrying them from book to book. Sometimes three or four men would be waiting their turn to make their postings in a given book. By the use of the posting slips a set of books may be

assigned to one man who will make all the entries in those books without the former confusion and waste of time. A posting clerk, under this system, should easily do twice more work than under the system previously in use.

In order to obtain efficiency through accounting, it is necessary to introduce recording methods that will reflect accurately the conditions of a municipal or private business. It is equally important to conduct the accounting in a manner that will secure from each person whose services are used, the largest possible product of intelligent labor, and, whenever possible, to introduce such mechanical elements as will insure speedy work and a conservation of human activity.

Accounting control such as that now being established in the City of New York, such as that which the United States Government on an even larger scale is attempting to establish in Washington, can never produce efficiency in government. It cannot furnish the elements of intelligence and energy which are the essentials of efficiency. It can and does, however, expose inefficiency, guard against dishonesty and clear the way for efficiency.